(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 April 2002 (18.04.2002)

PCT

(10) International Publication Number
WO 02/30347 A1

(51) International Patent Classification[7]: A61F 15/00

(21) International Application Number: PCT/US01/42615

(22) International Filing Date: 10 October 2001 (10.10.2001)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/685,259 10 October 2000 (10.10.2000) US

(71) Applicant: **THE PROCTER & GAMBLE COMPANY** [US/US]; One Procter & Gamble Plaza, Cincinnati, OH 45202 (US).

(72) Inventors: **FARRIS, Diane, Dunn**; 5732 McCarthy Court, West Chester, OH 45069 (US). **REDWINE, Nona, Jane**; 881 Tradewind Drive, Mason, OH 45040 (US).

(74) Agents: **REED, T., David** et al.; The Procter & Gamble Company, 5299 Spring Grove Avenue, Cincinnati, OH 45217-1087 (US).

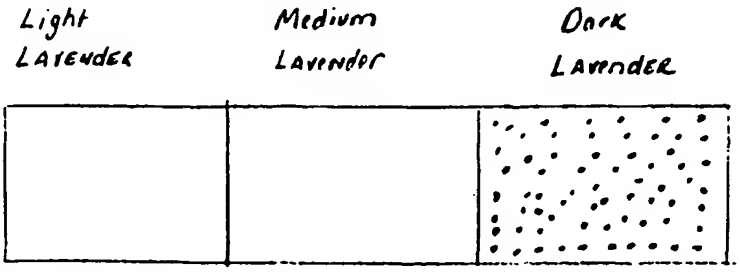
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EC, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ABSORBENT ARTICLES WITH CHARACTERISTICS INDICATED BY COLOR SIGNALS



(57) Abstract: The present invention encompasses a line of consumer products having two or more varying degrees of a pre-determined product performance characteristic, the line comprising: a first product having a first color identifier and a first degree of the pre-determined product performance characteristic; and a second product having a second color identifier and a second degree of the pre-determined product performance characteristic, wherein the first color identifier has a first color intensity, the second color identifier has a second color intensity, the first color intensity is less than the second color intensity, and wherein the first color identifier corresponds to the first degree of the product performance characteristic, the second color identifier corresponds to the second degree of the product performance characteristic. In a preferred mode, a lighter intensity of color of the color indicator indicates less of the performance characteristic and a deeper intensity of color of the color indicator indicates more of the performance characteristic.

WO 02/30347 A1

ABSORBENT ARTICLES WITH CHARACTERISTICS INDICATED BY COLOR SIGNALS

FIELD OF INVENTION

The present invention relates to lines of consumer products. Proper selection and use of such products within a line is communicated by means of a distinctive color-coding system associated with the articles, or preferably, with their packaging. In preferred embodiments, the invention relates to articles for absorbing body fluids, especially menses.

BACKGROUND OF THE INVENTION

Differentiation and selection of consumer products on store shelves is difficult due to the many types of products and variations of product characterizations within these product type. Differentiation and selection of catamenial products on store shelves are particularly difficult due to the many choices of product absorbencies such as: light absorbency, regular absorbency, and extra absorbency and product configurations, for example, daytime products, nighttime products, winged versions and the like. Surprisingly, some of the problems associated with the proper selection and use of such products is traceable to modern developments in the technologies used to improve their performance. In the past, the absorbency of catamenials, as well as other absorbent articles such as baby diapers and adult incontinence garments, could be estimated by visual inspection of their size, shape, and bulk. However, improvements made in modern

absorbent articles in an effort to increase in-use comfort and to increase the compactness for ease-of-packaging have resulted in the development of thin, and even ultra-thin, products. Rather than relying on size and bulk to achieve absorbency, such modern articles typically employ absorbent gelling materials (AGM's; "superabsorbents"), new methods of forming absorbent batts or pads of cellulosic fibers and/or various structural improvements to achieve the desired absorbency. Whatever the technology, the result is that the performance or absorbent capacity of such articles can no longer be reliably judged solely on the basis of their size and bulk.

Moreover, a woman's menstrual cycle is typically characterized by initial "mild flow" days, followed by "medium flow" days and concluding with "low flow" days. In order to meet the need for feminine protection during the entire sequence, at least one manufacturer has begun the sale of kits which contain multiple disposable absorbent catamenials having extra, regular, and light absorbent capacities, respectively. In this way, the need for protection can be met with as little discomfort as possible to the user over the entire menstrual cycle. Alternatively, light, regular, and extra absorbency articles can be sold separately or as a complete line of products.

Compliance with the prescribed sequence of usage is a prerequisite for the successful completion of any multi-phase regimen. This also applies to the aforesaid kits. The inadvertent selection of a low absorbency catamenial for use on a high flow day can result in considerable dissatisfaction due to the perceived "failure" of the product.

Accordingly, the proper usage of extra, regular, or light capacity absorbent articles, whether packaged separately or provided as kits, begins with the proper selection of such articles. The present invention provides an easy and intuitive method for

selecting the proper absorbency, particularly when the article is then moved from the original container and placed in the bathroom drawer, purse, etc.

Proper selection of consumer products requires explicit labeling and/or instructions. Despite considerable attention being given to such matters, mistakes continue to be made by consumers. In some instances, this may be due to inattention, or may be attributable to the limited amount of time a consumer has in making a selection of a given product. In others, linguistic difficulties may contribute to improper selection and usage. As noted above, the proliferation of sizes, shapes, conformations and brands in the field of disposable absorbent articles such as feminine care products may exacerbate the problem. Whatever the reason, it is problematic for a manufacturer when a well-designed product is judged by its users to be sub-optimal in performance, when the real problem stems from selection errors which result in misuse.

Typical instructional matter pertaining to the proper selection and use of absorbent articles conventionally comprises printed text, diagrams, labels, and combinations thereof. The objective of any optimal instructional matter is to be univocal, i.e. , to convey a message regarding proper selection and usage in such a clear, concise, and exact manner that essentially any user, regardless of distractions or adverse conditions, is prompted to choose and employ the product correctly.

Often color is used to convey a particular performance characteristic of a given product. For example, at least one manufacturer of catamenial tampons uses color-based signals on both the outer packaging and the wrapper of such tampons to denote absorbent capacity. In such products, however, different colors are used to represent different product characteristic levels (in this case absorbency). For example, a green band on the package and wrapper of a tampon might signal a "super" absorbency tampon, while a

blue band might signal a "regular" absorbency tampon. Such a system requires the memorization of arbitrary color/product characteristic associations which are not necessarily intuitive to the consumer.

SUMMARY OF THE INVENTION

The present invention encompasses a line of consumer products having two or more varying degrees of a pre-determined product performance characteristic, the line comprising:

a first product having a first color identifier and a first degree of the pre-determined product performance characteristic; and a second product having a second color identifier and a second degree of the pre-determined product performance characteristic, wherein the first color identifier has a first color intensity, the second color identifier has a second color intensity, the first color intensity is less than the second color intensity, and wherein the first color identifier corresponds to the first degree of the product performance characteristic, the second color identifier corresponds to the second degree of the product performance characteristic.

BRIEF DESCRIPTION OF THE DRAWINGS

While the specification concludes with claims particularly pointing out and distinctly claiming the subject matter which is regarded as forming the present invention, it is believed that the invention will be better understood from the following description taken in conjunction with the accompanying drawings, in which:

Figure 1 is the color line for the light lavender, medium lavender, and dark lavender.

Figure 2 is the side view of a package of interlabial devices for a low capacity interlabial device, a medium capacity interlabial device, and an extra capacity interlabial device.

Figure 3 is a color line for light gray, medium gray, and dark gray.

Figure 4 is the side view of a package for junior absorbency, regular absorbency, and super absorbency tampons.

DETAILED DESCRIPTION OF THE INVENTION

By the present invention, a system of distinct signal colors is used to implement the proper selection and use of consumer products, including catamenials, especially sanitary napkins and interlabial devices. The present invention may also be used in other fields such as beauty care, food and beverage, health care, laundry and cleaning, and tissues and towels. For example, color signals may be used in beauty care to denote more product performance characteristics of more or less moisture; in coffee products to differentiate between light, medium, and dark roast levels; in the health care area to denote stronger medicine such as cough drops and chloraseptics; in laundry and cleaning to indicate a higher concentration of detergent; and in tissues and towels to denote greater levels of absorbency. The use of signal colors in this manner univocally and unequivocally connotes performance characteristics, thereby improving user satisfaction with the product and decreased anxiety in choosing the correct product.

Signal colors may be placed on a product or its packaging in any shape such as droplets, circles, parallelepipeds, or the like. The signal colors may also be placed on the product or its packaging in any convenient size, for example, they may encompass the entire product or may encompass part of the product. Furthermore, the overall trade dress of the product may use the signal colors in a variety of ways. Specifically, signal colors may be placed anywhere on the product, or package, e.g on the top, sides, or inside, or all three. When so employed, the color intensity range provides an easy and intuitive method for selecting the proper product (for example, that with the desired absorbency).

When used on inner or outer wrap packaging the signals provide a method for selecting the proper products when the article is then removed from the original container and placed in the bathroom drawer, purse, etc.

Many embodiments of absorbent articles are well-known in the art. Sanitary napkins, sanitary panties, interlabial devices, intravaginal devices (tampons), adult incontinence products, infant diapers, pantiliners, and the like, have been described in the extensive patent literature and many such articles are in the stream of commerce. See, for example: for sanitary napkins U.S. Patents: 4,463,045 issued to Ahr et al. and 4,556,146 issued to Swanson et al.; for tampons such as U.S. Patents: 5,087,239 issued to Beastall et al. and 5,279,541 issued to Frayman et al.; and for diapers such as U.S. Patents: 4,573,986 issued to Minetola et al.; 4,695,278 issued to Lawson; 4,081,301 issued to Buell; and 4,515,595 issued to Kievit. Such articles contain an absorbent structure, typically in the form of a "core" or pad. Various fluid-permeable topsheets, fluid-impermeable backsheets, panty-protective "wings," tape fasteners and the like, are optionally used to construct elements for such articles and are all within the experience of those of ordinary skilled in the art.

Likewise, the manufacture of such articles having differing absorbent capacities (here, for the sake of simplicity, designated as "extra," "regular," and "light") is also a matter of routine. By way of example and not intending to limit the present invention, a modern "extra" absorbent article will typically have an absorbent core comprising an AGM in combination with a cellulosic batt of fibers. Conversely, a "light" absorbent article may comprise only the fibrous batt, without the AGM. A "medium" absorbent article may contain some intermediate level of AGM.

Again, without intending to limit the present invention, the following capacities (for menses) of absorbency designated as "extra," "regular," and "light," respectively, will typically, but non-quantitatively, fall within ranges

FOR ULTRA THIN PADS

Size	Retained Capacity
Regular Length	25 - 30 grams
Long Length	30 grams
Long Overnights	34 - 35 grams

FOR INTERLABIAL DEVICES:

Size	Product Length (mm)	Product Caliper (mm)	Retained Capacity g @ .25 psi	g @ 1.0 psi
Light	76 (-16%)	4.5	3.7 (-35%)	2.7 (-32%)
Regular	91 (Base)	5.5	5.7 (Base)	4.0 (Base)
Long	106 (+16%)	6.5	10.5 (+84%)	6.7 (+67%)

FOR TAMPONS:

Size	Retained Capacity
Junior absorbency:	< 6 grams
Regular absorbency:	6 - 9 grams
Super absorbency:	9 - 12 grams
Superplus absorbency:	12 -15 grams

FOR DISPOSABLE DIAPERS (AS URINE):

There are no mandatory absorbency ranges for diapers. The diapers are marketed according to weight:

Premie

Newborn

Small

Small - Medium

Large

Extra-Large.

Of course, the absorbent values of such capacities can be adjusted by the manufacturer, as evidenced by the fact that it has become commonplace to designate absorbency using various descriptive, but non-quantitative, terms such as "mini," "regular," "super," "maxi," "overnight," and the like, as a guide to selection based on the user's conception of expected absorbency performance, and perceived need.

In its broadest aspect, the present invention relates to color indicators for use with the consumer articles (such as these mentioned previously) or their packaging. The term "color," as used herein, relates to the phenomenon of visual perception that enables one to differentiate otherwise identical objects. Colors may be expressed in terms of "hue," i.e., that attribute of colors that permits them to be classified as red, yellow, green, blue, etc., or as an intermediate between any contiguous pair of colors. Colors (hues) are also commonly perceived and referred to in terms of their relative intensities, using terms such as "light/medium/dark," "bright," "intensity" (i.e. "saturation" or "shades") and the like, either between colors or within a range of "shades" for otherwise the same color. Thus, one can readily perceive the difference between "light" (or "pale"), medium, and dark (or "deep") "shades" of red, blue, green, etc. In the context of one embodiment the present invention, a light or pale color (or shade) signals a "light" absorbency article; a medium color (or shade) signals a "regular" absorbency article; and a dark color signals an "extra" absorbency article. It will be appreciated by those skilled in the visual arts that the terms

"light/medium/dark" or "pale/medium/deep" are relative, not absolute, terms that can be used to compare the intensity of colors/ hues with each other.

While a wide palette of colors (including blacks and grays) can be employed herein, it is preferred to use a member selected from the group consisting of lavender, red, green, blue, yellow, violet, gray, and black. Moreover, while the use of different colors, especially those having differing intensities, can be used to signal absorbency or other product performance characteristic such as size and strength, it is preferred to use differing intensities or shades of the same basic hue. For example, over the range of intensities for the lavender hue: light lavender can signal light absorbency; medium lavender i.e. medium "purple" can signal regular absorbency; and deep purple can signal extra absorbency. An important advantage of using a range of intensity within the same hue is that continuity for the visual selection of the overall product line is maintained, while the user is provided with the desired, intuitive, selection, and usage means which is the object of this invention.

For example, if the product performance characteristic being represented is absorbency, a pale lavender might represent low absorbency. A deep or high intensity purple might represent high absorbency, while an intermediate shade of lavender could represent regular absorbency.

With such a line up, the consumer is able to remember easily that light intensity of color corresponds to lower absorbency while higher absorbency corresponds to a higher intensity shade of the color signal.

Preferably, the variation in color intensity is great enough to be readily perceived by a consumer without having to refer to an external basis or calibration means for comparison.

In a preferred mode, the product herein is displayed in a manner such that the consumer's attention is drawn to the entire product line. The product line may be but is not limited to the fields of beauty care; food and beverage; health care; laundry and cleaning; and tissues and towels. The product line may contain two or more products. Thus, on a store shelf or display rack, the products have the gradation of absorbencies are preferably placed in a side-by-side array, most preferably in ascending order of absorbency. The ascending order may be from left to right; right to left; up to down; down to up; horizontally; or diagonally. It is noted that side-by-side herein means that all articles in the product line are in sufficient proximity to each other, either horizontally, vertically, or diagonally to be within the consumer's zone of perception at the same time. The products should be in close enough proximity to prevent undue confusion for the consumer. Thus, in a horizontal display reading from left-to-right, products having low absorbency (light intensity), medium absorbency (medium intensity) and high absorbency (deepest intensity) are displayed together. This not only draws attention to the entire product line, but also provides additional visual signals to the consumer by virtue of the side-by-side display.

The following Example illustrates the practice of the invention, but is not intended to be limiting thereof.

Example I

Multiple absorbent interlabial devices such as those described in PCT publication WO 98/57608 are separately packaged in film unit wrappers having the colors: light lavender, medium lavender, and dark lavender ("purple") respectively to create a product line. The lowest capacity interlabial devices are packaged in light lavender wrappers. The medium capacity interlabial devices are packaged in medium lavender wrappers.

The extra capacity interlabial devices are packaged in dark lavender wrappers. The product line is shown to panelists who readily perceive the variation in absorbency by visual inspection of the colors. Figure 1 is the color line for the light lavender, medium lavender, and dark lavender. Figures 2 shows the lowest capacity interlabial device 1 packaged in a light lavender; the medium capacity interlabial device 2 packaged in medium lavender; and the extra capacity interlabial device 3 packaged in dark lavender.

Example II

A "multi-pack" kit comprising light, regular, and extra absorbency tampons is prepared. The kit consists of a three different intensities of the same hue to denote the respective absorbencies of the products within the kits.

In an alternate mode, the kit can comprise a combination of pantiliners, sanitary napkins, and interlabial devices, each appropriately color-coded to indicate their respective differences in absorbencies in the manner described above. Figure 3 is the color line for the light gray, medium gray, and dark gray. Figure 4 shows a kit containing a tampon package for junior absorbency 4 packaged in light gray, regular absorbency 5 packaged in medium gray, and super absorbency tampons 6 packaged in dark gray.

Example III

A diaper having the performance characteristic of size. Multiple diapers are separately packaged in film unit wrappers having the colors: light lavender, medium lavender, and dark lavender ("purple") respectively to create a product line. The Premie-sized diapers are packaged in extra-light lavender wrappers. The Newborn-sized diapers are packaged in light lavender wrappers. The Small-sized diapers are packaged in medium lavender wrappers. The Small - Medium-sized diapers are packed in dark lavender wrappers. The Large-sized diapers are packed in extra dark lavender wrappers.

The product line is shown to panelists who readily perceive the variation in absorbency by visual inspection of the colors.

There are various systems of defining color and intensity. Two common color systems are the HSB system and the L,a,b system. In Adobe Photoshop 5.0, the color charts define a specific color by using three characters of HSB. For example, in the HSB color system a color H can be defined along the circumference of a cone from 0 to 360, S refers to saturation which is the distance from 0 to 100 from the center of the cone, and B which is the black-white scale ranges from 0 to 100. In the L,a,b system, L refers to the white-black axis and the corresponding color identified in the L,a,b color solid is defined along three orthogonal axes. For example,

	H	S	B	L	a	b
Pure White	0	0	100	100	0	0
Pure Black	100	0	0	0	0	0
Red	0	100	100	54	81	70
Blue	240	100	100	30	68 -	112

There are an unlimited number of colors available and the various intensities of what appears to be the same color that can be made by varying H, S, and B. For example, in the HSB system, if H is constant about 240, and B is constant at about 100 while S is changed from about 100 to 60 the color remains a distinct blue but changes in the depth or intensity of color. Similarly, if H is constant about 250 and S is about 100 and B is about 100 the color which is a color that is definitely blue but as B changes from about 100 to 80 the color changes so it is a darker and more gray blue which causes a darker intensity. In another example, if S and B are about 100 a distinct range of dark to light

blue occurs as the H changes from about 190 to 260. One of skill in the art would readily appreciate that a similar set of examples can be made for several other colors by simply going to Photoshop and going to the "color picking", or double clicking on the background-foreground color area of the tools.

The disclosures of all patents, patent applications (and any patents which issue thereon, as well as any corresponding published foreign patent applications), and publications mentioned throughout this description are hereby incorporated by reference herein. It is expressly not admitted, however, that any of the documents incorporated by reference herein teach or disclose the present invention.

While particular embodiments of the present invention have been illustrated and described, it would be obvious to those skilled in the art that the various other changes and modifications can be made without departing from the spirit and scope of the invention.

CLAIMS

What is claimed is:

1. A line of consumer products having two or more varying degrees of a pre-determined product performance characteristic, said line comprising:

a first product having a first color identifier and a first degree of said pre-determined product performance characteristic; and

a second product having a second color identifier and a second degree of said pre-determined product performance characteristic, wherein

said first color identifier has a first color intensity, said second color identifier has a second color intensity, said first color intensity is less than said second color intensity, and wherein

said first color identifier corresponds to said first degree of said product performance characteristic, said second color identifier corresponds to said second degree of said product performance characteristic.

2. The line of consumer products of Claim 1 wherein said first degree of said product performance characteristic is less than said second degree of said product performance characteristic.

3. The line of consumer products of Claim 1, wherein said first and said second color identifiers have a similar hue.

4. The line of consumer products of Claim 1 wherein said consumer products comprise catamenial articles.

5. The line of consumer products of Claim 1 wherein said consumer products comprise sanitary napkins and interlabial devices.

6. The line of consumer products according to Claim 1 which comprises two or more of said products displayed in a side-by-side array.

7. A consumer product kit comprising:

at least two consumer products having at least two varying degrees of a pre-determined product performance characteristic wherein at least two consumer products has a first product having a first color identifier and a first degree of said pre-determined product performance characteristic;

a second product having a second color identifier and a second degree of said pre-determined product performance characteristic wherein

said first color identifier having a first color intensity, said second color identifier having a second color intensity, said first color intensity being less than said second color intensity, and wherein said first color identifier corresponds to said first degree of said product performance characteristic, said second color identifier corresponds to said second degree of said product performance characteristic; and

a common package which encompasses said first product and said second product.

8. The consumer product kit of Claim 7 wherein each of said at least two consumers products is further packaged in an individual product wrapper.

9. The consumer product kit according to Claim 8 wherein said color indicators are provided on a surface which is a member selected from the group consisting of:

a.) an outer package;

b.) said individual product wrapper;

c.) said products;

d.) usage instructions packaged with said kit; and

e.) mixtures of two or more of a), b), c), and d).

10. A method of improving user compliance in a usage regimen which involves a line of consumer products having two or more varying degrees of a pre-determined product performance characteristic, comprising signaling said performance characteristic to the user by means of color identifier of the line of consumer products according to Claim 1.

11. The method according to Claim 10 wherein said color identifiers comprise different intensities of the same hue.

12. The method according to Claim 10 a line of consumer products comprises three varying of a pre-determined product performance characteristic, and wherein said pre-determined product performance characteristic is absorbent capacity.

13. A method of providing a line of consumer products, said method comprising the steps of:

a) providing a first consumer product, said first consumer product having a first absorbent capacity;

b) providing a second consumer product, said second consumer product having a second absorbent capacity;

c) providing a third consumer product, said third consumer product having a third absorbent capacity

wherein said first consumer product has a first color identifier having a first color intensity;

wherein said second consumer product has a second color identifier having a second color intensity;

and wherein said third consumer product has a third color identifier having a third color intensity.

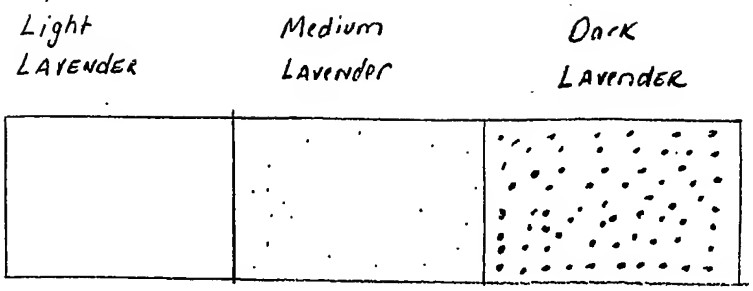


Figure 1

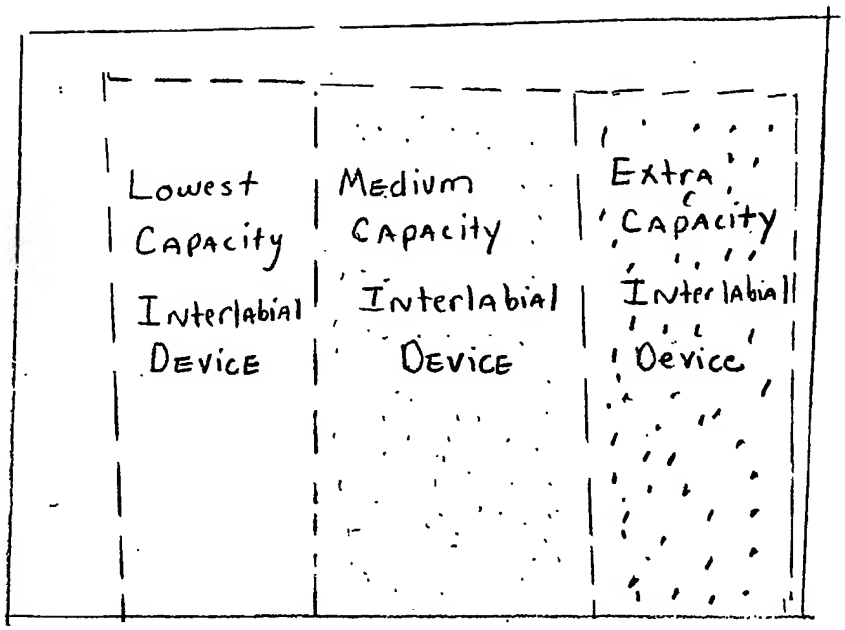

Lowest Capacity Interlabial Device
Medium Capacity Interlabial Device
Extra Capacity Interlabial Device

Figure 2

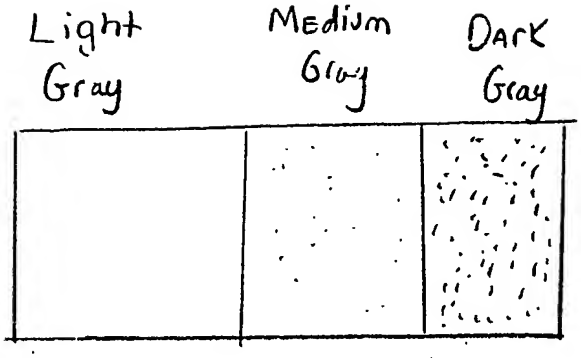


Figure 3

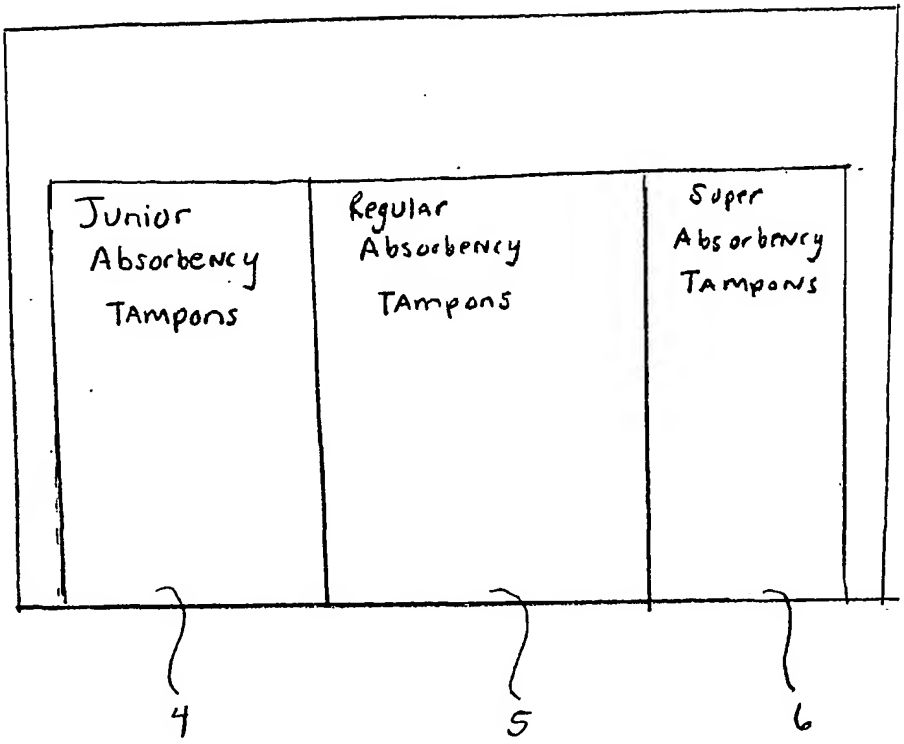

Junior
Absorbency
Tampons
Regular
Absorbency
Tampons
Super
Absorbency
Tampons
4
5
6

Figure 4

INTERNATIONAL SEARCH REPORT

Inte onal Application No
PCT/US 01/42615

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A61F15/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A61F B65D G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 97 45088 A (PROCTER & GAMBLE) 4 December 1997 (1997-12-04) page 1, line 13 -page 6, line 13 page 20, line 22 -page 23, line 6 claim 8 ---	1,2, 4-10,12, 13
X	US 3 941 132 A (LENAGHAN ARLENE) 2 March 1976 (1976-03-02) column 3, line 2-51 column 5, line 19-28 claim 5; figures 1-5 ---	1,2,10, 12,13
X	US 5 865 322 A (MILLER CAROLYN JEANNE) 2 February 1999 (1999-02-02) column 3, line 5 -column 4, line 43 claims 1-7; figure 1 --- -/--	1,3-7, 10-13

[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
7 March 2002	21/03/2002

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Joly, F

Form PCT/ISA/210 (second sheet) (July 1992)

INTERNATIONAL SEARCH REPORT

Int ional Application No
PCT/US 01/42615

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	DE 197 04 603 A (SCHELLING DAGMAR) 8 January 1998 (1998-01-08) claims 7,9,13,14; figures 1-4	1,2,6,10
A	column 3, line 38-46	8,9
A	EP 0 986 996 A (MCNEIL PPC INC) 22 March 2000 (2000-03-22) paragraph '0022!; figures 1A-3B	1,7,10, 13
X	FR 2 763 163 A (MAURIN CLAUDINE MARIE HENRIETT) 13 November 1998 (1998-11-13) figures 1-13B page 11, line 4 -page 12, line 7	1-3, 10-12
A	WO 94 00362 A (FATER SPA ;PROCTER & GAMBLE (US); MARINELLI LUIGI (IT); PALUMBO GI) 6 January 1994 (1994-01-06) figures 1-18	1,7,10, 13
A	WO 94 23677 A (MILLS NICHOLAS JOHN) 27 October 1994 (1994-10-27) figures 3A-3B	1,7,10, 13

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int[illegible]onal Application No
PCT/US 01/42615

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9745088	A	04-12-1997	AU	736393 B2	26-07-2001
			AU	3150297 A	05-01-1998
			AU	736576 B2	02-08-2001
			AU	3150397 A	05-01-1998
			BR	9709610 A	10-08-1999
			BR	9709628 A	10-08-1999
			CA	2256472 A1	04-12-1997
			CN	1225572 A	11-08-1999
			CZ	9803928 A3	14-04-1999
			EP	0901361 A1	17-03-1999
			JP	2000508215 T	04-07-2000
			JP	11513916 T	30-11-1999
			NO	985591 A	01-02-1999
			TR	9802488 T2	22-03-1999
			WO	9745088 A1	04-12-1997
			WO	9745089 A1	04-12-1997
			US	5947302 A	07-09-1999
			US	6093027 A	25-07-2000
			US	5865322 A	02-02-1999
			US	5839585 A	24-11-1998
US 3941132	A	02-03-1976	NONE		
US 5865322	A	02-02-1999	US	5947302 A	07-09-1999
			AU	736393 B2	26-07-2001
			AU	3150297 A	05-01-1998
			AU	736576 B2	02-08-2001
			AU	3150397 A	05-01-1998
			BR	9709610 A	10-08-1999
			BR	9709628 A	10-08-1999
			CA	2256472 A1	04-12-1997
			CN	1225572 A	11-08-1999
			CZ	9803928 A3	14-04-1999
			EP	0901361 A1	17-03-1999
			JP	2000508215 T	04-07-2000
			JP	11513916 T	30-11-1999
			NO	985591 A	01-02-1999
			TR	9802488 T2	22-03-1999
			WO	9745088 A1	04-12-1997
			WO	9745089 A1	04-12-1997
			US	6093027 A	25-07-2000
			US	5839585 A	24-11-1998
DE 19704603	A	08-01-1998	DE	19704603 A1	08-01-1998
EP 0986996	A	22-03-2000	AU	4735199 A	23-03-2000
			BR	9905188 A	29-08-2000
			CN	1247824 A	22-03-2000
			EP	0986996 A2	22-03-2000
			HU	9903136 A1	28-08-2000
			TW	427899 B	01-04-2001
FR 2763163	A	13-11-1998	FR	2763159 A1	13-11-1998
			FR	2763160 A1	13-11-1998
			FR	2763161 A1	13-11-1998
			FR	2763162 A1	13-11-1998
			FR	2763163 A1	13-11-1998
			EP	0858062 A2	12-08-1998

INTERNATIONAL SEARCH REPORT

Information on patent family members

Inte onal Application No
PCT/US 01/42615

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9400362 A	06-01-1994	IT 1259583 B	20-03-1996
		AT 192402 T	15-05-2000
		AU 4541693 A	24-01-1994
		BR 9306582 A	08-12-1998
		CA 2137903 A1	06-01-1994
		DE 69328557 D1	08-06-2000
		DE 69328557 T2	01-02-2001
		EP 0647199 A1	12-04-1995
		ES 2145050 T3	01-07-2000
		JP 7508252 T	14-09-1995
		PT 647199 T	31-10-2000
		WO 9400362 A1	06-01-1994
		US H1748 H	01-09-1998
WO 9423677 A	27-10-1994	AU 6507494 A	08-11-1994
		GB 2277016 A	19-10-1994
		WO 9423677 A2	27-10-1994